Vapor Monitoring

When installed and operated properly, vapor monitoring meets the North Dakota leak detection requirements for underground storage tanks and piping. Vapor monitoring uses strategically placed monitoring wells in the backfill or surrounding soil around the tanks and piping to measure for the presence of petroleum fumes which may indicate a leak. The state regulations also recognize sampling for tracer compounds introduced into the UST system.

How does the vapor monitoring work?

- Vapor monitoring senses or measures fumes from leaked product in the soil around the tank.

- Tracer compound analysis samples for the presence of a tracer compound outside the UST system that was introduced into the tank and underground piping. Tracer compound analysis requires the installation of monitoring wells/sampling points strategically placed in the tank backfill or along pipe runs to intercept special chemicals that, in the event of a leak, are picked up at the sampling points.

- Monitoring can be performed manually once a month with a portable field instrument or with permanently installed equipment which automatically and continuously monitors soil gas vapors and responds with a visual or audible alarm when a leak is detected.

What are the regulatory requirements for vapor monitoring?

- The UST backfill must be sand, gravel or another material that will allow the petroleum vapors or tracer compound to easily move to the monitor.
- The backfill should be clean enough that previous contamination does not interfere with the detection of a current leak.
- The substance stored in the UST must vaporize easily so that the vapor monitor can detect a release. Vapor monitoring systems do not work well with diesel fuel.
- High groundwater, excessive rain, or other sources of moisture must not interfere with the operation of vapor monitoring for more than 30 consecutive days.
- Monitoring wells must be secured and clearly marked.
- Monitoring must be performed at least ***once a month***.
- A written log must be kept documenting *the MONTHLY* monitoring results.
- The most recent 12 months of monitoring records must be maintained on file.
- All vapor monitoring devices should be periodically calibrated according to the manufacturer's instructions to ensure they are properly responding.

Will vapor monitoring work at your site?

Although this type of leak detection is allowed in North Dakota, vapor monitoring is not the best method to detect leaks in USTs because it only detects leaks after petroleum has impacted the environment.

Before installing a vapor monitoring system, a site assessment must be done to determine whether vapor monitoring is appropriate at the site. A site assessment usually includes at least a determination of the groundwater level, background contamination, stored product type, and soil type. This assessment can only be done by a trained professional.

The number and placement of vapor monitoring wells for UST systems is site specific and depends on the size, number and location of the tanks and piping at the site. Generally one well per 20 to 40 feet surrounding tanks and piping is sufficient if the monitoring well is installed in the backfill surrounding the tank system. In all cases the Department should be consulted when determining the correct number and placement of vapor monitoring wells.

What to do if vapor monitoring detects a leak?

- Contact a service technician **immediately** to determine the source of the leak.
- Empty the product from the identified leaking tank and/or stop using the grade of fuel that is associated with the identified piping leak.
- **Report the confirmed fuel leak to the North Dakota Department of Health at 701.328.5166.**